

WHAT IS CLAIMED IS:

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1. An ink cartridge for an ink jet type printing apparatus having a print head, the ink cartridge comprising:
a container having an ink chamber for containing ink
5 therein;

an ink supply port for ejecting the ink from said ink chamber to the print head; and

a memory device for storing data related to the history of the ink cartridge, said memory device has an area in which the
10 data is stored in a rewritable manner.

2. An ink cartridge according to claim 1, wherein the data includes data related to the number of reproduction time of the ink cartridge.
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3. An ink cartridge according to claim 1, wherein the data includes data related to a maintenance processing required for the reproduction of the ink cartridge.

20 4. An ink cartridge according to claim 3, wherein the data includes data related to a condition of cleaning.

25 5. An ink cartridge according to claim 3, wherein the data includes data related to a condition of exchange of a part of the ink cartridge.

6. An ink cartridge according to claim 1, wherein the data includes data related to the time of final use of the ink cartridge.

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7. An ink cartridge according to claim 1, wherein the data includes data related to the time of final ink end of the ink cartridge.

8. An ink cartridge according to claim 1, wherein the data includes data related to an environment of use of the ink cartridge.

9. An ink cartridge according to claim 1, wherein said memory device stores data indicative of the date of manufacture of the ink cartridge.

10. An ink cartridge according to claim 1, wherein said memory device stores data indicative of a lifetime of the ink cartridge.

11. An ink cartridge according to claim 1, wherein said memory device stores data indicative of the time of final use of the ink cartridge.

12. An ink cartridge according to claim 1, wherein said memory device stores data indicative of the number of reproductions of the ink cartridge which can be effected.

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13. An ink cartridge for an ink jet type printing apparatus having a print head, the ink cartridge comprising:
a container having an ink chamber for containing ink therein;

5 an ink supply port for ejecting the ink from said ink chamber to the print head; and

a memory device for storing data related to the ink or the ink cartridge, said memory device stores therein data relating to a minimum ink amount to be contained in the ink cartridge, and
10 said memory device having an area in which the data indicative of the residual ink amount is stored in a rewritable manner.

14. An ink-jet printing apparatus comprising:

a print head for ejecting ink droplets;

15 an ink cartridge containing ink therein for supplying the ink to said print head;

a memory device storing data related to the ink cartridge;

and

a control device accessible to said memory device for
20 controlling said print head in accordance with data supplied from the exterior, said control device controlling a charging of the ink into said print head in accordance with data, stored in said memory device, when said ink cartridge is attached to the printing apparatus.

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15. An ink-jet printing apparatus according to claim 14, wherein said control device judges from the data in said memory

device whether or not the attached ink cartridge is a reproduced one.

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16. An ink-jet printing apparatus according to claim
5 14, wherein the control of the ink charging operation is directed
to the amount of drawing of the ink.

17. An ink-jet printing apparatus according to claim
14, wherein said control device causes data, related to the
10 conditions of use of said ink cartridge, to be stored in said memory
device when said ink cartridge is to be detached from the printing
apparatus.

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18. An ink-jet printing apparatus according to claim
15 17, wherein said data, related to said conditions of use, is the
time of ink end of said ink cartridge.

19. An ink-jet printing apparatus according to claim
17, wherein said data, related to said conditions of use, is
20 conditions of maintenance of said print head during the time when
said ink cartridge is attached to the printing apparatus.

20. An ink-jet printing apparatus according to claim
17, wherein said data, related to said conditions of use, is data
25 related to an environment during the time when said ink cartridge
is attached to the printing apparatus.

25. An ink-jet printing apparatus according to claim 24, wherein said control device executes the cleaning operation when the residual ink amount is greater than the sum of the preset minimum amount of ink and an amount of ink which is consumed by the cleaning operation.

26. An ink-jet printing apparatus according to claim 24, wherein said control device executes a brief cleaning operation when the residual ink amount is greater than the preset minimum ink amount but less than the sum of the preset minimum ink amount and an ink amount which is consumed by the the cleaning operation.

27. A cartridge reproducing device for an ink cartridge for an ink jet type printing apparatus, the reproducing device comprising:

means for reading data, related to a history of use of the ink cartridge to be reproduced, from memory device provided on the ink cartridge; and

a control device which controls reproduction processing apparatus in accordance with said data, and causes at least data, representing the number of reproduction and the time of reproduction, to be stored in said memory device after the reproducing operation is finished.

28. A reproducing device according to claim 27, wherein said control device causes data, related to conditions

of maintenance of the ink cartridge, to be stored in the memory device after the reproducing operation is finished.

Sub a13/ 5 ~~29. A reproducing device according to claim 27, wherein said reproduction processing apparatus includes at least cartridge cleaning device, and ink injecting device.~~

30. A reproducing device according to claim 27, wherein said control device judges from the data in the memory device whether or not the reproduction is possible.

Sub a14/ 15 ~~31. A reproducing device according to claim 27, wherein said control device controls the degree of cleaning by said cleaning means in accordance with the data in said memory device.~~

32. A reproducing device for an ink cartridge according to claim 27, wherein said control device effects a washing of the ink cartridge with ink to be reproduced in accordance with the data in the memory device.

Sub a15/ 25 ~~33. An ink-jet printing apparatus comprising:
a print head for ejecting ink droplets;
an ink cartridge containing ink therein for supplying the
ink to said print head;
a memory device storing data related to the ink cartridge;
and~~

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~~a control device accessible to said memory device for
controlling said print head in accordance with data supplied from
the exterior, said control device judges, from the data stored
in said memory device, whether or not the next reproduction is
5 possible.~~

34. An ink jet printing apparatus according to claim
33, wherein, wherein said control device causes data, related to
the conditions of use of said ink cartridge, to be stored in said
10 memory device when said ink cartridge is to be detached from the
printing apparatus.

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35. An ink-jet printing apparatus according to claim
14, wherein said control device judges whether or not the next
15 reproduction is possible in accordance with the data stored in
said memory device, and the control device causes to display that
the ink cartridge is discarded if it judges that the reproduction
is impossible.

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21. An ink-jet printing apparatus according to claim 14, wherein said control device judges from the data, stored in said memory device, whether or not the next reproduction is possible.

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22. An ink-jet printing apparatus according to claim 14, wherein said control device judges whether or not the next reproduction is possible in accordance with the data stored in said memory device, and the control device causes to display that the ink cartridge is discarded if it judges that the reproduction is impossible.

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23. An ink-jet printing apparatus according to claim 21, wherein said judgment is made in accordance with the number of reproduction, a lifetime, a time period after detection of ink end, and an environment of use.

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24. An ink-jet printing apparatus comprising:
a print head for ejecting ink droplets;

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an ink cartridge containing ink therein for supplying the ink to said print head;

a memory device storing data representative of a preset minimum ink amount and a residual ink in the ink cartridge; and

a control device accessible to said memory device for controlling said print head in accordance with data supplied from the exterior, said control device judging whether a cleaning operation is necessary in accordance with the data stored in said memory device.

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